UNDERSEA WARFARE RESEARCH OPPORTUNITIES

- Operational Oceanography
- Shallow Water Signal Processing
- Marine Mammal Bio Acoustics
- Acoustic Mine Detection
- Tactical Decision Making Under Uncertainty
- Underwater Surveillance
- Fluid Dynamics of Underwater Weapons
- Low Frequency Array Modeling
- Mine Countermeasures
- Digital Signal Processing

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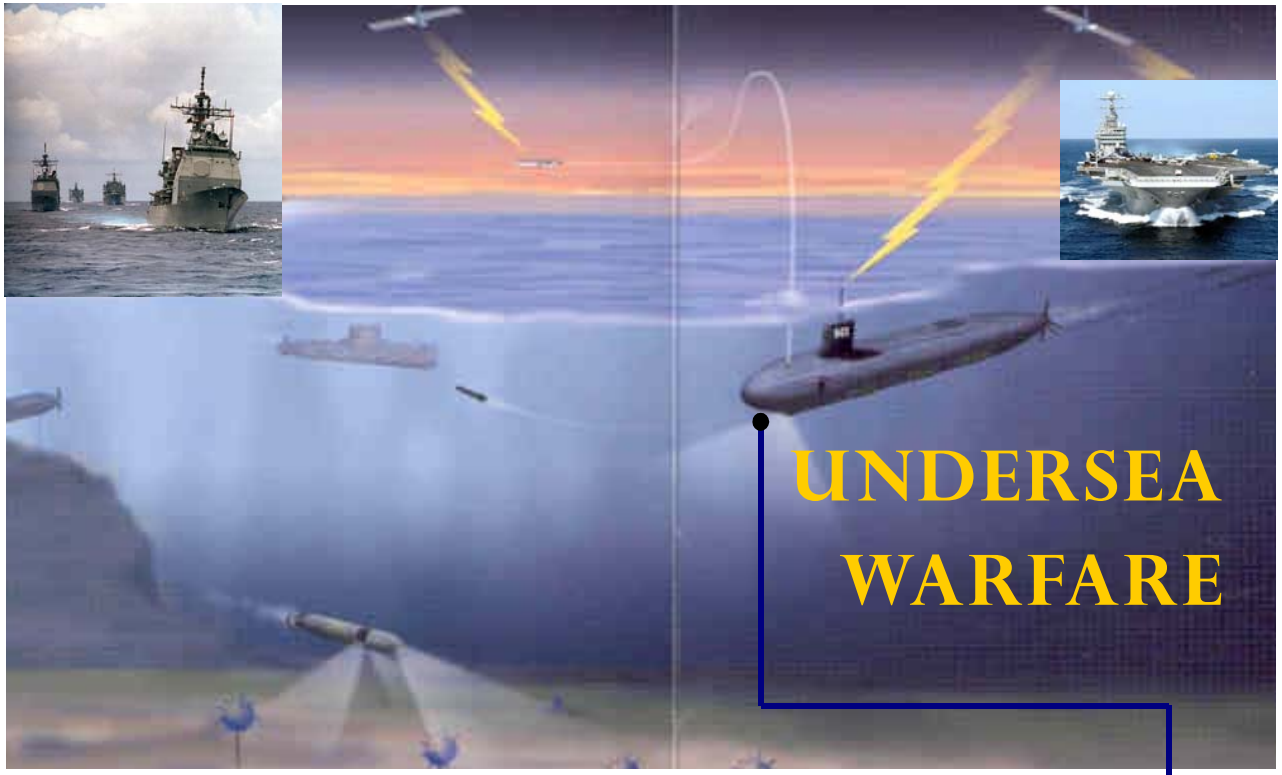

UNDERSEA WARFARE

NAVAL POSTGRADUATE SCHOOL

833 Dyer Rd., Spanagel 304
Monterey, CA 93943

Phone: 831-656-2044
www.nps.navy.mil/usw

MASTER OF SCIENCE DEGREE

CURRICULUM BROCHURE

The Monterey area is a great place to live! There are many good schools, military housing is available, and recreational activities are limitless.

www.nps.navy.mil/usw

Educating Officers in the Core Scientific Concepts that Govern Undersea Warfare

NAVAL POSTGRADUATE SCHOOL

THE PROGRAM

The Undersea Warfare (USW) curriculum focus is engineering fundamentals, physical principles, operations research and systems analysis that contribute to USW (antisubmarine and mine warfare (ASW/MIW)) operational employment. The program is interdisciplinary with specialization in:

- **Operations Research** (emphasis on tactical applications and decision analysis)

- **Physical Oceanography** (emphasis on factors affecting acoustic surveillance and detection)

- **Electrical Engineering** (emphasis on signal processing)

- **Engineering Acoustics** (underwater acoustics and weapons effects)

- **Applied Science*** (Robotics)

Other tailored disciplines such as:

- **Systems Engineering and Analysis*** (system analysis requirements and development)

What can I expect?

Eight quarters (2 years) of academic challenges with direct application to current problems of interest to the Navy and the Department of Defense.

The culmination of the program is the Masters Thesis**, where students focus their skills on a selected research topic of interest.

What about when I graduate?

You will be equipped with strong technical and engineering skills to succeed in your profession.

You will have further developed the ability to apply sound thinking and analytical reasoning in your problem solving and decision making.

You will hold a Master of Science Degree in Operations Research, Electrical Engineering (signal processing), Engineering Acoustics, Physical Oceanography, Systems Engineering* (SE) or Applied Science*(Robotics).

What are the prerequisites to get into the program?

A baccalaureate degree, or equivalent, from a program with a calculus sequence and a calculus-based physics sequence that results in an Academic Profile Code (APC) of 323 is required for direct input. Officers not meeting the academic requirements for direct input enter the program via one or two quarters of Engineering Science (curriculum 460).

*New curriculum paths
** The SE degree requires a team project in lieu of a thesis.

Can I complete Joint Professional Military Education (JPME) Phase I while at NPS?

Yes, JPME is integrated in the USW program. Naval War College faculty are on-site to allow for completion of the three required courses, Strategy and Policy, National Security Decision Making, and Joint Maritime Operations.

When do students start?

Entry dates are in spring and fall. A new ASW Certificate program will allow early preparation via distance learning.

> In the 40 years that I have practiced, taught and performed research in undersea warfare I believe that to successfully conduct USW operations requires a fundamental knowledge of four basic disciplines: Oceanography (characterize the ocean environment), Physics (under water acoustics), Operations Research (search and detection theory) and Electrical Engineering (signal processing).

Professor Emeritus Bob Bourke
Former Chair, Oceanography Department
Founding Member, ASW/USW Academic Group at NPS

> The versatile nature of this program has allowed me to pursue a course of study tailored to my own interests, with relevance to both my professional military career and the challenges that lie beyond.

LT Robert Hill, USN
USW Student, September 03 Graduate